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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,436	06/09/2000	Jason Wayne Riddering	SEA 9168	1997

7590 12/10/2002

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EXAMINER

MILLER, BRIAN E

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/590,436

Applicant(s)

RIDDERING ET AL.

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,7-9,11,12,14,16-18,20,21 and 34-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7-9,11,12,14,16-18,20,21 and 34-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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Claims 1, 3, 7-9, 11-12, 14, 16-18, 20-21, 34-38 are now pending.

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the newly added claim language, i.e., “means for controlling roll attitude”, as recited in claims 1 & 3; and “means for controlling roll parameters”, as recited in claim 34, are not found in the specification.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 34-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 34 the phrase “means for controlling roll parameters” lacks antecedent basis. Only a “means for controlling roll attitude” has been previously recited in the independent claim.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3, 7-9, 11-12, 14, 16-18, 20-21, 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA), Figs. 1-16 in view of Suzuki (JP 10-069747).

The AAPA discloses a head suspension 164 (FIGs. 6-7) including a gimbal portion 176; head assembly 112, which assembly is mounted to an actuator assembly 122 (FIG. 1) which is part of a disk drive assembly 100 including a rotating disc 106 which includes a textured landing zone 134 (if desired) in which it is "apparent to those of skill in the art...to control the flying height of the head assembly in a manner that allows the head assembly to fly extremely close to the disc surface in the data area 130, and at a greater flying height when the head assembly is moved to the landing zone 134." (see specification page 8, lines 23-28); flying attitude is discussed in FIGs. 4-5; known bi-metal adjustment structure 212 is shown in FIGs. 11-13 and known piezo-electric adjustment element 224 is shown in FIGs. 14-16.

It is further known in the art that maintaining constant fly height and pitch and roll characteristics across the radius of the disk is an important design characteristics in head suspension technology, the AAPA is expressly silent as to placement of the above described bi-metal or piezo-electric adjustment structures onto a gimbal structure (shown in FIG. 7) to controllably alter the flying height and/or attitude of the slider/head assembly.

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JP Patent to Suzuki, however, teaches the use of a piezo-electric device 7, 8 on gimbal 5, 6 to dynamically control/adjust (with controller 11) at least the flying height of the slider (see Solution, last 3 lines). Although the exact location of the piezo-electric elements are not shown by Suzuki, one having ordinary skill in the art would have provided such at the locations required in the claims, e.g., on the gimbal beams, through routine engineering optimization and experimentation, depending on the particular adjustment desired. Suzuki teaches the importance of maintaining and adjusting the fly height of the head assembly and thus applicants' claimed invention in view of the AAPA.

***Response to Amendment***

4. Applicant's arguments filed 9/25/02 have been fully considered but they are not persuasive.

A...Applicant asserts (regarding claims 1 & 3) that the "combination of Applicants' admitted prior art and Suzuki does not teach nor suggest controlling roll parameters of a head as now claimed."

In response, in so far as the Examiner can ascertain from the specification what structure and equivalents applicant intends to encompass by the phrase "means for controlling roll parameters", as this language has not been found in the specification, and applicant has not specifically pointed out what structure this would include, the Examiner maintains that the AAPA and Suzuki, at least encompass structural and functional equivalents as required by the means-plus-function language.

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**B...**With respect to claims 7 (and similarly claim 16) and their dependent claims, applicant asserts that "the recited plurality of bending elements provides a system for dynamically controlling the roll attitude of the head assembly which is not taught or suggested by the recited combination of references."

The Examiner maintains that JP Patent to Suzuki, teaches the use of a piezo-electric device 7, 8 on gimbal 5, 6 to dynamically control/adjust (with controller 11) at least the flying height of the slider (see Solution, last 3 lines). Although the exact location of the piezo-electric elements are not shown by Suzuki, one having ordinary skill in the art would have provided such at the locations required in the claims, e.g., on the gimbal beams, through routine engineering optimization and experimentation, depending on the particular adjustment desired. Suzuki teaches the importance of maintaining and adjusting the flying parameters of the head assembly and thus applicants' claimed invention in view of the AAPA.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-F 8am-5:30pm (FF off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

  
**Brian E. Miller**  
**Primary Examiner**  
**Art Unit 2652**

bem  
December 4, 2002